

WHAT IS CLAIMED IS:

1. A nail varnish composition comprising, in a cosmetically acceptable medium, at least one film-forming gradient copolymer comprising at least two different monomeric units and exhibiting a mass polydispersity index (PI) of less than or equal to 2.5, wherein the composition is capable of forming a film having an adhesion, measured according to Standard ASTM D 3359-7, corresponding to a detachment percentage of less than 45%.
2. The composition according to Claim 1, wherein the mass polydispersity index (PI) ranges from 1.1 to 2.3.
3. The composition according to Claim 2, wherein the mass polydispersity index (PI) ranges from 1.15 to 2.0.
4. The composition according to Claim 3, wherein the mass polydispersity index (PI) ranges from 1.2 to 1.9.
5. The composition according to Claim 4, wherein the mass polydispersity index (PI) ranges from 1.2 to 1.8.
6. The composition according to Claim 1, wherein the detachment percentage is less than 40%.
7. The composition according to Claim 6, wherein the detachment percentage is less than 35%.
8. The composition according to Claim 1, wherein the weight-average molecular mass of the at least one film-forming gradient copolymer ranges from 5 000 g/mol to 1 000 000 g/mol.
9. The composition according to Claim 8, wherein the weight-average molecular mass of the at least one film-forming gradient polymer ranges from 5 500 g/mol

to 800 000 g/mol.

10. The composition according to Claim 9, wherein the weight-average molecular mass of the at least one film-forming gradient polymer ranges from 6 000 g/mol to 500 000 g/mol.

11. The composition according to Claim 1, wherein the number-average molecular mass of the at least one film-forming gradient copolymer ranges from 5 000 g/mol to 1 000 000 g/mol.

12. The composition according to Claim 11, wherein the number-average molecular mass of the at least one film-forming gradient polymer ranges from 5 500 g/mol to 800 000 g/mol.

13. The composition according to Claim 12, wherein the number-average molecular mass of the at least one film-forming gradient polymer ranges from 6 000 g/mol to 500 000 g/mol.

14. The composition according to Claim 1, wherein the at least one film-forming gradient copolymer comprises polymer chains each comprising at least one monomeric unit M_i , such that there is a nonzero probability of encountering the monomeric unit M_i along each chain, regardless of the normalized position (x) on the polymer chain.

15. The composition according to Claim 1, wherein the at least one film-forming gradient copolymer is such that, on the adsorption chromatography ("LAC") curve representing the proportion of polymers as a function of the elution volume, the difference ($V^{1/2}_{\text{max}} - V^{1/2}_{\text{min}}$) is less than or equal to 3.5, wherein $V^{1/2}_{\text{min}}$ is the minimum value of the elution volume at mid-height of the curve and $V^{1/2}_{\text{max}}$ is the maximum value of the elution volume at mid-height of the curve.

16. The composition according to Claim 15, wherein the difference ($V^{1/2}_{\text{max}} - V^{1/2}_{\text{min}}$) is less than or equal to 3.5, wherein $V^{1/2}_{\text{min}}$ is the minimum value of the elution volume at mid-height of the curve and $V^{1/2}_{\text{max}}$ is the maximum value of the elution volume at mid-height of the curve.

max - $V^{1/2}$ min) ranges from 1 to 2.8.

17. The composition according to Claim 16, wherein the difference ($V^{1/2}$ max - $V^{1/2}$ min) ranges from 1.2 to 2.5.

18. The composition according to Claim 1, wherein the at least one film-forming gradient copolymer comprises at least two different monomeric units which are each present in an amount ranging from 1 to 99% by weight, relative to the total weight of the final copolymer.

19. The composition according to Claim 18, wherein the at least one film-forming gradient copolymer comprises at least two different monomeric units which are each present in an amount ranging from 2 to 98% by weight, relative to the total weight of the final copolymer.

20. The composition according to Claim 19, wherein the at least one film-forming gradient copolymer comprises at least two different monomeric units which are each present in an amount ranging from 5 to 95% by weight, relative to the total weight of the final copolymer.

21. The composition according to Claim 1, wherein the at least one film-forming gradient copolymer comprises at least one hydrophilic monomeric unit which is present in an amount ranging from 1 to 99% by weight, relative to the total weight of the copolymer.

22. The composition according to Claim 21, wherein the at least one film-forming gradient copolymer comprises at least one hydrophilic monomeric unit which is present in an amount ranging from 2 to 70% by weight, relative to the total weight of the copolymer.

23. The composition according to Claim 22, wherein the at least one film-

forming gradient copolymer comprises at least one hydrophilic monomeric unit which is present in an amount ranging from 3 to 50% by weight, relative to the total weight of the copolymer.

24. The composition according to Claim 23, wherein the at least one film-forming gradient copolymer comprises at least one hydrophilic monomeric unit which is present in an amount ranging from 4 to 30% by weight, relative to the total weight of the copolymer.

25. The composition according to Claim 24, wherein the at least one film-forming gradient copolymer comprises at least one hydrophilic monomeric unit which is present in an amount ranging from 5 to 25% by weight, relative to the total weight of the copolymer.

26. The composition according to Claim 1, wherein the at least one film-forming gradient copolymer comprises at least one monomeric unit, the homopolymer of which has a T_g of less than or equal to 20°C.

27. The composition according to Claim 26, wherein the homopolymer has a T_g ranging from -150°C to 20°C.

28. The composition according to Claim 27, wherein the homopolymer has a T_g ranging from -130°C to 18°C.

29. The composition according to Claim 28, wherein the homopolymer that has a T_g ranging from -120°C to 15°C.

30. The composition according to Claim 26, wherein the at least one monomeric unit, the homopolymer of which has a T_g ≤ 20°C, is present in an amount of monomeric unit ranging from 1 to 99% by weight, relative to the total weight of the copolymer.

31. The composition according to Claim 30, wherein the at least one monomeric unit, the homopolymer of which has a $T_g \leq 20^\circ\text{C}$, is present in an amount of monomeric unit ranging from 20 to 90% by weight, relative to the total weight of the copolymer.

32. The composition according to Claim 31, wherein the at least one monomeric unit, the homopolymer of which has a $T_g \leq 20^\circ\text{C}$, is present in an amount of monomeric unit ranging from 30 to 85% by weight, relative to the total weight of the copolymer.

33. The composition according to Claim 32, wherein the at least one monomeric unit, the homopolymer of which has a $T_g \leq 20^\circ\text{C}$, is present in an amount of monomeric unit ranging from 50 to 75% by weight, relative to the total weight of the copolymer.

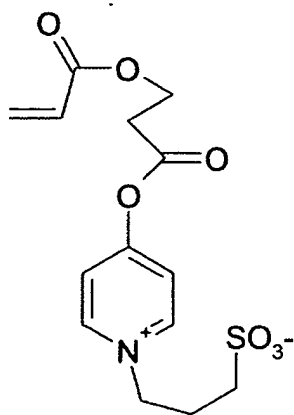
34. The composition according to Claim 1, wherein the at least one film-forming gradient copolymer comprises at least one hydrophilic monomeric unit chosen from units of:

- amino($\text{C}_1\text{-C}_4$ alkyl) (meth)acrylate derivatives;
- N,N-di($\text{C}_1\text{-C}_4$ alkyl)amino($\text{C}_1\text{-C}_6$ alkyl)(meth)acrylamides;
- di($\text{C}_1\text{-C}_8$ alkyl)allylamines;
- vinylamine;
- vinylpyridines;

and the salts thereof with inorganic acids or organic acids and the quaternized forms thereof of all the abovementioned compounds;

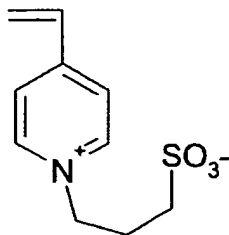
- ethylenic carboxylic acids;
- carboxylic anhydrides comprising at least one vinyl bond;

- ethylenic sulphonic acids and the salts thereof;
- the potassium salt of 3-(acryloyloxy)propanesulphonic acid and the compound of formula $\text{CH}_2=\text{CHCOOCH}_2\text{OCH}_2(\text{OH})\text{CH}_2\text{SO}_3^-\text{Na}^+$;
- amides of unsaturated carboxylic acids;
- hydroxyalkyl (meth)acrylates;
- (meth)acrylates of polyethylene glycol (5 to 100 EO) and of glycol which are optionally substituted on their end functional group by at least one group chosen from alkyl, phosphate, phosphonate and sulphonate groups;
- alkoxyalkyl (meth)acrylates;
- polysaccharide (meth)acrylates;
- vinylamides;
- vinyl ethers;
- methacrylamidopropoxytrimethylammonium betaine;
- N,N-dimethyl-N-methacryloyloxyethyl-N-(3-sulphopropyl)ammonium betaine;
- 3-methacryloyloxyethoxycarbonylpyridinium;
- the compound of formula:



; and

- 4-vinylpyridiniumsulphopropyl betaine of formula:



35. The composition according to Claim 34, wherein the amino(C₁-C₄ alkyl) (meth)acrylate derivatives are chosen from N,N-di(C₁-C₄ alkyl)amino(C₁-C₆ alkyl) (meth)acrylates.

36. The composition according to Claim 35, wherein the N,N-di(C₁-C₄ alkyl)amino(C₁-C₆ alkyl) (meth)acrylates are chosen from N,N-dimethylaminoethyl methacrylate (MADAME) and N,N-diethylaminoethyl methacrylate (DEAMEA).

37. The composition according to Claim 34, wherein the N,N-di(C₁-C₄ alkyl)amino(C₁-C₆ alkyl)(meth)acrylamides are chosen from N,N-dimethylacrylamide, N,N-dimethylaminopropylacrylamide (DMAPA) and N,N-dimethylaminopropylmethacrylamide (DMAPMA).

38. The composition according to Claim 34, wherein the di(C₁-C₈ alkyl)allyl amines are dimethyldiallyl amines.

39. The composition according to Claim 34, wherein the vinylpyridines are chosen from 2-vinylpyridine and 4-vinylpyridine.

40. The composition according to Claim 34, wherein the ethylenic carboxylic acids are chosen from monocarboxylic acid and dicarboxylic acids.

41. The composition according to Claim 40, wherein the monocarboxylic acid and dicarboxylic acids are chosen from acrylic acid, methacrylic acid, crotonic acid, itaconic acid, fumaric acid and maleic acid.

42. The composition according to Claim 34, wherein the carboxylic anhydrides comprising at least one vinyl bond are maleic anhydrides.

43. The composition according to Claim 34, wherein the ethylenic sulphonic acids are chosen from styrenesulphonic acid, acrylamidopropanesulphonic acid, and the salts thereof.

44. The composition according to Claim 34, wherein the amides of unsaturated carboxylic acids are chosen from acrylamide and methacrylamide and the N-substituted derivatives thereof.

45. The composition according to Claim 34, wherein the amides of unsaturated carboxylic acids are chosen from N-(C₁-C₄ alkyl)(meth)acrylamides and N,N-di(C₁-C₄ alkyl)(meth)acrylamides.

46. The composition according to Claim 45, wherein the N-(C₁-C₄ alkyl)(meth)acrylamides are N-methylacrylamides.

47. The composition according to Claim 46, wherein the N,N-di(C₁-C₄ alkyl)(meth)acrylamides are N,N-dimethylacrylamides.

48. The composition according to Claim 47, wherein the hydroxyalkyl (meth)acrylates are chosen from hydroxyalkyl (meth)acrylates comprising an alkyl group comprising from 2 to 4 carbon atoms.

49. The composition according to Claim 48, wherein the hydroxyalkyl (meth)acrylates are hydroxyethyl (meth)acrylates.

50. The composition according to Claim 34, wherein the (meth)acrylates of polyethylene glycol (5 to 100 EO) and of glycol which are optionally substituted on their end functional group by at least one group chosen from alkyl, phosphate, phosphonate and sulphonate groups are chosen from glyceryl acrylate, methoxypolyethylene glycol (8 or 12

EO) (meth)acrylate and hydroxypolyethylene glycol (meth)acrylate.

51. The composition according to Claim 34, wherein the alkoxyalkyl (meth)acrylates are ethoxyethyl (meth)acrylates.

52. The composition according to Claim 34, wherein the polysaccharide (meth)acrylates are sucrose acrylates.

53. The composition according to Claim 34, wherein the vinylamides are chosen from vinylacetamide and optionally cyclic vinylamides.

54. The composition according to Claim 53, wherein the cyclic vinylamides are chosen from vinyl lactams.

55. The composition according to Claim 54, wherein the vinyl lactams are chosen from N-vinylpyrrolidone and N-vinylcaprolactam.

56. The composition according to Claim 34, wherein the vinyl ethers are vinyl methyl ethers.

57. The composition according to Claim 1, wherein the at least one film-forming gradient copolymer comprises at least one hydrophilic monomeric unit chosen from units of N,N-dimethylaminoethyl methacrylate (MADAME), acrylic acid, methacrylic acid, crotonic acid, styrenesulphonic acid, acrylamidopropanesulphonic acid, dimethylaminopropylmethacrylamide (DAPMA), styrenesulphonate, hydroxyethyl acrylate, glyceryl acrylate, ethoxyethyl methacrylate, ethoxyethyl acrylate, methoxypolyethylene glycol (8 or 12 EO) (meth)acrylate, hydroxypolyethylene glycol (meth)acrylate, N-vinylpyrrolidone, N-vinylcaprolactam, acrylamide and N,N-dimethylacrylamide.

58. The composition according to Claim 1, wherein the at least one film-forming gradient copolymer comprises at least one monomeric unit chosen from units of C₁-

C₄ alkyl (meth)acrylates, the C₁-C₄ alkyl (meth)acrylates resulting in the production of (meth)acrylic acid after hydrolysis.

59. The composition according to Claim 58, wherein the C₁-C₄ alkyl (meth)acrylates are chosen from tert-butyl (meth)acrylate and ethyl (meth)acrylate.

60. The composition according to Claim 1, wherein the at least one film-forming gradient copolymer comprises at least one monomeric unit, the homopolymer of which has a T_g of less than or equal to 20°C, wherein the at least one monomeric unit is chosen from units of:

- ethylenic hydrocarbons comprising from 2 to 10 carbons;
- acrylates of formula CH₂=CHCOOR₁, wherein R₁ is chosen from saturated and unsaturated, linear and branched, hydrocarbonaceous groups comprising from 1 to 12 carbons with the exception of the tert-butyl group, wherein at least one heteroatom chosen from O, N, S and Si is optionally inserted, it being possible in addition for the hydrocarbonaceous groups to be optionally substituted with at least one substituent chosen from hydroxyl groups and from halogen atoms chosen from Cl, Br, I and F atoms; or alternatively R₁ is an -(R'')_x-(OC₂H₄)_n-OR''' group, wherein x = 0 or 1, R'' is chosen from saturated and unsaturated, linear and branched, hydrocarbonaceous groups comprising from 1 to 12 carbons, n is a number ranging from 5 to 100 and R''' is chosen from H and CH₃;
- methacrylates of formula: CH₂=C(CH₃)-COOR₂, wherein R₂ is chosen from saturated and unsaturated, linear and branched, hydrocarbonaceous groups comprising from 3 to 12 carbon atoms wherein at least one heteroatom chosen from O, N, S and Si is optionally inserted, it being possible in addition for the hydrocarbonaceous groups to be optionally substituted with at least one substituent chosen from hydroxyl groups and halogen atoms

chosen from Cl, Br, I and F atoms; or alternatively R_2 is an $-(R'')_x-(OC_2H_4)_n-OR'''$ group, wherein $x = 0$ or 1 , R'' is chosen from saturated and unsaturated, linear and branched, hydrocarbonaceous groups comprising 1 to 12 carbons, n is a number ranging from 5 to 100 and R''' is chosen from H and CH_3 ;- N- or N,N-substituted derivatives of unsaturated C_{1-12} carboxylic acid amides;

- vinyl esters of formula: $R_3-CO-O-CH=CH_2$, wherein R_3 is chosen from linear and branched alkyl groups comprising from 2 to 12 carbons; and

- vinyl alkyl ethers, wherein the alkyl group comprises from 1 to 12 carbons,

61. The composition according to Claim 60, wherein the ethylenic hydrocarbons comprising from 2 to 10 carbons are chosen from ethylene, isoprene and butadiene.

62. The composition according to Claim 60, wherein the N- or N,N-substituted derivatives of unsaturated C_{1-12} carboxylic acid amides are chosen from N-(C_{1-12} alkyl)(meth)acrylamides.

63. The composition according to Claim 62, wherein the N-(C_{1-12} alkyl)(meth)acrylamides are N-octylacrylamides.

64. The composition according to Claim 60, wherein, in formula $R_3-CO-O-CH=CH_2$, the alkyl groups of R_3 are chosen from vinyl propionate, vinyl butyrate, vinyl ethylhexanoate, vinyl neononanoate and vinyl neododecanoate.

65. The composition according to Claim 60, wherein the vinyl alkyl ethers are chosen from methyl vinyl ether and ethyl vinyl ether.

66. The composition according to Claim 1, wherein the at least one film-forming gradient copolymer comprises at least one monomeric unit, the homopolymer of which has a T_g of less than or equal to $20^\circ C$, wherein the at least one monomeric unit is

chosen from units of:

- isoprene and butadiene;
- methyl acrylate, ethyl acrylate, isobutyl acrylate, n-butyl acrylate, ethylhexyl acrylate, methoxyethyl acrylate, ethoxyethyl acrylate and hydroxypolyethylene glycol acrylate;
- ethoxyethyl methacrylate, hexyl methacrylate, ethylhexyl methacrylate and hydroxypolyethylene glycol methacrylate;
- N-(C₆₋₁₂ alkyl)(meth)acrylamides; and
- vinyl esters of formula: R₃-CO-O-CH=CH₂, where R₃ is chosen from linear and branched alkyl groups comprising from 6 to 12 carbons.

67. The composition according to Claim 66, wherein the N-(C₆₋₁₂ alkyl)(meth)acrylamides are N-octylacrylamides.

68. The composition according to Claim 60, wherein, in formula R₃-CO-O-CH=CH₂, the alkyl groups of R₃ are chosen from vinyl neononanoate and vinyl neodecanoate.

69. The composition according to Claim 1, wherein the at least one film-forming gradient copolymer comprises at least one monomeric unit, the homopolymer of which has a Tg of greater than or equal to 20°C, wherein the at least one monomeric unit is chosen from units of:

- vinyl compounds of formula: CH₂=CH-R₄, wherein R₄ is chosen from a hydroxyl group; an -NH-C(O)-CH₃ group; an -OC(O)-CH₃ group; C₃ to C₈ cycloalkyl groups; C₆ to C₂₀ aryl groups; C₇ to C₃₀ aralkyl groups (C₁ to C₄ alkyl group); a 4- to 12-membered heterocyclic group comprising at least one heteroatom chosen from O, N and S; and a heterocyclylalkyl (C₁ to C₄ alkyl) group; it being possible for the cycloalkyl, aryl, aralkyl, heterocyclic or heterocyclylalkyl groups to be optionally substituted with at least one substituent chosen

from hydroxyl groups, halogen atoms and linear and branched C₁ to C₄ alkyl groups wherein at least one heteroatom chosen from O, N, S and P is optionally inserted, it being possible in addition for the alkyl groups to be optionally substituted with at least one substituent chosen from hydroxyl groups, from halogen atoms chosen from Cl, Br, I, and F atoms, and from Si atoms;

- acrylates of formula CH₂=CH-COOR₅, wherein R₅ is chosen from a tert-butyl group; a C₃ to C₈ cycloalkyl group; a C₆ to C₂₀ aryl group; a C₇ to C₃₀ aralkyl group (C₁ to C₄ alkyl group); a 4- to 12-membered heterocyclic group comprising at least one heteroatom chosen from O, N and S; and a heterocyclylalkyl (C₁ to C₄ alkyl) group; it being possible for the cycloalkyl, aryl, aralkyl, heterocyclic or heterocyclylalkyl groups to be optionally substituted with at least one substituent chosen from hydroxyl groups, halogen atoms and linear and branched C₁ to C₄ alkyl groups wherein at least one heteroatom is chosen from O, N, S and P is optionally inserted, it being possible in addition for the alkyl groups to be optionally substituted by at least one substituent chosen from hydroxyl groups and from halogen atoms chosen from Cl, Br, I, and F atoms, and from Si atoms;

- methacrylates of formula CH₂=C(CH₃)-COOR₆, wherein R₆ is chosen from linear and branched C₁ to C₄ alkyl groups, it being possible in addition for the alkyl groups to be optionally substituted by at least one substituent chosen from hydroxyl groups, from halogen atoms chosen from Cl, Br, I, and F atoms, and from Si atoms; a C₃ to C₈ cycloalkyl group; a C₆ to C₂₀ aryl group; a C₇ to C₃₀ aralkyl group (C₁ to C₄ alkyl group); a 4- to 12-membered heterocyclic group comprising at least one heteroatom chosen from O, N and S; and a heterocyclylalkyl (C₁ to C₄ alkyl) group; it being possible for the cycloalkyl, aryl, aralkyl, heterocyclic or heterocyclylalkyl groups to be optionally substituted by at least one substituent chosen from hydroxyl groups, halogen atoms and linear and branched C₁ to C₄

alkyl groups wherein at least one heteroatom chosen from O, N, S and P is optionally inserted, it being possible in addition for the alkyl groups to be optionally substituted by at least one substituent chosen from hydroxyl groups and halogen atoms chosen from Cl, Br, I and F atoms;

- (meth)acrylamides of formula: $\text{CH}_2=\text{C}(\text{R}')\text{-CO-NR}_7\text{R}_8$,

wherein R_7 and R_8 , which may be identical or different, are each chosen from a hydrogen atom and linear and branched alkyl groups comprising from 1 to 12 carbon atoms, and R' is chosen from a hydrogen atom and a methyl group.

70. The composition according to Claim 69, wherein, in formula $\text{CH}_2=\text{CH-R}_4$, the heterocyclalkyl groups of R_4 are furfuryl groups.

71. The composition according to Claim 69, wherein, in formula $\text{CH}_2=\text{CH-COOR}_5$, the heterocyclalkyl groups of R_5 are furfuryl groups.

72. The composition according to Claim 69, wherein, in formula $\text{CH}_2=\text{C}(\text{CH}_3)\text{-COOR}_6$, the alkyl groups of R_6 are chosen from methyl, ethyl, propyl and isobutyl groups.

73. The composition according to Claim 69, wherein, in formula $\text{CH}_2=\text{C}(\text{CH}_3)\text{-COOR}_6$, the heterocyclalkyl groups of R_6 are furfuryl groups.

74. The composition according to Claim 69, wherein, in formula: $\text{CH}_2=\text{C}(\text{R}')\text{-CO-NR}_7\text{R}_8$, the alkyl groups of R_7 and R_8 , which may be identical or different, are each chosen from n-butyl, t-butyl, isopropyl, isohexyl, isooctyl and isononyl groups.

75. The composition according to Claim 1, wherein the at least one film-forming gradient copolymer comprises at least one monomeric unit, the homopolymer of which has a T_g of greater than or equal to 20°C , wherein the at least one monomeric unit is chosen from units of:

- furfuryl acrylate, isobornyl acrylate, tert-butyl acrylate, tert-butylcyclohexyl acrylate and tert-butylbenzyl acrylate;
- methyl methacrylate, n-butyl methacrylate, ethyl methacrylate or isobutyl methacrylate;
- styrene or styrenesulphonate; and
- vinyl acetate and vinylcyclohexane.

76. The composition according to Claim 1, wherein the at least one film-forming gradient copolymer is present in an amount ranging from 0.1 to 60% by weight, relative to the total weight of the composition.

77. The composition according to Claim 76, wherein the at least one film-forming gradient polymer is present in an amount ranging from 0.2 to 40% by weight, relative to the total weight of the composition.

78. The composition according to Claim 77, wherein the at least one film-forming gradient polymer is present in an amount ranging from 1 to 35% by weight, relative to the total weight of the composition.

79. The composition according to Claim 78, wherein the at least one film-forming gradient polymer is present in an amount ranging from 5 to 30% by weight, relative to the total weight of the composition.

80. The composition according to Claim 1, wherein the at least one film-forming gradient copolymer is present in a form chosen from a dissolved forms and from a dispersion form chosen from aqueous and organic dispersion forms.

81. The composition according to Claim 80, wherein the at least one film-forming gradient polymer is dissolved in water or an organic solvent.

82. The composition according to Claim 1, further comprising at least one constituent chosen from additional film-forming polymers, additional agents which are able

to form a film, water, organic solvents, thickeners, coloring materials, fillers, spreading agents, wetting agents, dispersing agents, antifoaming agents, preservatives, UV screening agents, active principles, surfactants, moisturizing agents, fragrances, stabilizing agents, antioxidants, vitamins, trace elements, basifying agents, acidifying agents, and ceramides.

83. The composition according to Claim 1, wherein the composition is capable of forming a film having a damping power " $\tan\delta$ " ranging from 0.5 to 1.6.

84. The composition according to Claim 83, wherein the composition is capable of forming a film having a damping power " $\tan\delta$ " ranging from 0.8 to 1.4.

85. The composition according to Claim 1, wherein the composition is capable of forming a film having a storage modulus E' of less than 300 MPa.

86. The composition according to Claim 85, wherein the composition is capable of forming a film having a storage modulus E' of less than 100 MPa.

87. The composition according to Claim 86, wherein the composition is capable of forming a film having a storage modulus E' less than 80 MPa.

88. The composition according to Claim 1, wherein the composition is provided in a form chosen from bases for varnishes; products for making up the nails; finishing compositions and top coats to be applied to a product for making up the nails; and products for the cosmetic care of the nails.

89. A cosmetic process for making up and/or caring for nails, comprising applying to the nails a cosmetic composition, in a cosmetically acceptable medium, comprising at least one film-forming gradient copolymer comprising at least two different monomeric units and exhibiting a mass polydispersity index (PI) of less than or equal to 2.5, wherein the composition is capable of forming a film having an adhesion, measured according to Standard ASTM D 3359-7, corresponding to a detachment percentage of less

than 45%.